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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,432	07/31/2003	Jeffrey P. Rupley II	42P16353	2860

8791 7590 08/17/2006

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EXAMINER

MOLL, JESSE R

ART UNIT PAPER NUMBER

2181

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/632,432	<b>Applicant(s)</b> RUPLEY ET AL.	
	<b>Examiner</b> Jesse R. Moll	<b>Art Unit</b> 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

*Fritz Fleming*  
**FRITZ FLEMING**

**SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100**

**Attachment(s)**

- |                                                                                                    |                                                                             |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. <u>20060811</u>                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7 August 2006</u>                                                         | 6) <input type="checkbox"/> Other: _____                                    |

*8/16/2006*

### **Detailed Action**

1. Claims 1-22 have been examined.

Acknowledgment of papers filed: Amendment on 5 June 2006 and IDS on 7 August 2006. The papers filed have been placed on record.

### ***Drawings***

2. The drawings were received on 5 June 2006. These drawings are accepted.

### ***Withdrawn Objections***

3. Applicant, via amendment has overcome the objections to the title, specification and claims 9 and 17. The objections have been respectfully withdrawn.

### ***Claim Objections***

4. Claims 14-22 are objected to.

Examiner requests that the term “(add indication of bulk or partial write)” on line 2 of claim 14 be removed as it appears to be a note which was not removed.

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Claims 15-22 are objected to due to their dependence of objected to parent claim 14.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Morrison (U.S. Patent No. 6,279,102 B1).

7. Regarding claim 1, Morrison discloses an apparatus comprising: a storage structure to store at least one entry (rename table 32; see fig. 3), the at least one entry to include a register identifier value (Class 60; see fig. 4; col. 4, lines 45-48); a first physical rename register (Physical Register 41; see fig. 3; col. 3, lines 48-53) of a first length; and a second physical rename register (Physical Register 42; see fig. 3; col. 3, lines 48-53) of a second length different than the first length (see col. 3, lines 43-45), wherein the first and second rename registers are distinct from each other and do not share any common bits (Physical Register 41 is distinct from Physical Register 42); wherein the register identifier value is to indicate a current length (each class may store data of different sizes), wherein

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the current length is selected from a set including the first length (size of the register 41) and the second length (size of the register 42).

*Note that the class field in the rename table indicates which class the renamed register belongs to. Since it is disclosed (col. 3, lines 43-45) that the two classes may store data of different sizes, the class field would also indicate the size of the register.*

8. Regarding claim 2, Morrison discloses the apparatus of claim 1, wherein: the first and second rename registers belong to a plurality of  $n$  physical rename registers, wherein  $n > 2$  (see col. 4, lines 65-67); each of the  $n$  physical rename registers is of a distinct length; and the set includes each of the  $n$  distinct lengths (see col. 5, lines 3-4).

*It is disclosed that more than 2 classes are possible while using multiple bit class information. Further, Morrison discloses that the multiple bits can be employed to store size information. Clearly, this shows the use of multiple register files (more than 2) of different distinct lengths.*

9. Regarding claim 3, Morrison discloses the apparatus of claim 1, wherein: the storage structure is to store a plurality of entries, each of the plurality of entries to include a corresponding register identifier value (see fig. 4; col. 4, lines 42-48).

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10. Regarding claim 4, Morrison discloses the apparatus of claim 1, wherein: the first physical rename register is one of a plurality (z) of physical rename registers of the first length (see col. 2, lines 47-51).

*Note that it is apparent that Morrison considered using more than one rename register of each class. The document shows only 1 of each class for simplicity.*

11. Regarding claim 5, Morrison discloses the apparatus of claim 1, wherein: the second physical rename register is one of a plurality (m) of physical rename registers of the second length (see col. 2, lines 47-51; see above regarding claim 4).

12. Claim 6 recites the same limitations as claim 5 and is rejected under the same grounds.

13. Regarding claim 8, Morrison discloses the apparatus of claim 1, further comprising: a logical register (Original Register; see col. 2, lines 47-52); and rename logic (Rename Unit 40; see fig. 3) to map an instance of the logical register to a selected physical rename register, where the selected physical rename register is selected from a plurality of registers comprising the first physical rename register and the second physical rename register (see col. 2, lines 47-52).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison in view of knowledge common in the art.

16. Morrison discloses the apparatus of claim 6.

Morrison does not expressly disclose  $z$  is not equal to  $m$ .

Examiner asserts that it was common knowledge at the time of the invention to use a different number of rename registers for two different classes of registers.

It would have been obvious at the time of the invention for one of ordinary skill in the art to have modified the invention of Morrison to use a different number of registers of a first length and second length in order to more efficiently use space.

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*Note that it is very common for processors to use one type of register more often than other types of registers. Therefore, the register file size of the two different types would be different to reduce space and power usage.*

### ***Response to Arguments***

17. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claim 9-22 have been fully considered and are persuasive. Applicant, via amendment, has overcome the rejections of these claims. The rejection of claims 9-22 has been respectfully withdrawn.

### ***Allowable Subject Matter***

18. Claims 9-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14-22 would be allowable if rewritten to overcome the objection to claim 14 set forth in this Office action.

19. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose or fairly suggest



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determining that as destination register a multiple bit field register having n bit positions where n is greater than one and allocating a physical rename register of a first length responsive to a partial-bit write of only 1 bit and a physical rename register of a second length responsive to a bulk-bit write of x bit positions, where x is greater than 1 and less than or equal to n. Independent claim 14 recites these limitations as well as dependant claim 9.

### ***Conclusion***

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse R. Moll whose telephone number is (571)272-2703. The examiner can normally be reached on M-F 9:00 am - 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on 571-272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JM 8/15/06

Jesse R Moll  
Examiner  
Art Unit 2181

  
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8/16/2006